

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

Reserve
aSB945
.G9A76
1992



Plan of Work

The Appalachian Integrated Pest Management Gypsy Moth Demonstration Project

Fiscal Year 1992

Cooperating Organizations

Environmental Action Foundation

National Gypsy Moth Management Board

USDA Agricultural Research Service

USDA Animal and Plant Health Inspection Service

USDA Forest Service

Northeastern Area State & Private Forestry

Region 8 Forest Pest Management

Northeastern Forest Experiment Station

Monongahela National Forest

George Washington National Forest

Jefferson National Forest

USDI Park Service

Shenandoah National Park

Blue Ridge Parkway

New River Gorge NSR

Appalachian Trail

US Environmental Protection Agency

VA Department of Agriculture and Consumer Services

VA Department of Forestry

VPI&SU Cooperative Extension Service

Westvaco Corporation

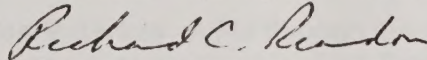
WV Department of Agriculture

WV Forestry Division

WVU Cooperative Extension Service

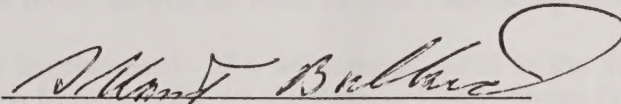
Prepared by:

AIPM Planning Committee
AIPM Field/County/Regional Coordinators

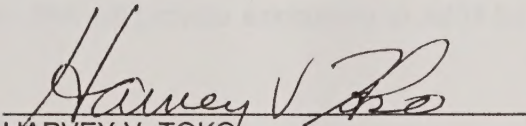


RICHARD C. REARDON
Chairman, AIPM Planning Committee

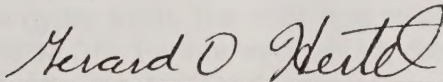
Approved by:



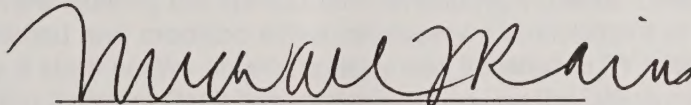
ALLAN T. BULLARD
AIPM Program Manager



HARVEY V. TOKO
Co-Chairman, AIPM Steering Committee



GERARD D. HERTEL
Co-Chairman, AIPM Steering Committee



MICHAEL T. RAINS
Area Director

First Name: [Signature]
Last Name: [Signature]
Address: [Signature]
City: [Signature]
State: [Signature]
Zip: [Signature]

[Signature]
[Signature]
[Signature]

[Signature]
[Signature]
[Signature]

[Signature]
[Signature]
[Signature]

[Signature]
[Signature]
[Signature]

West Virginia University Cooperative Extension Service (WVU CES) - The cooperative agreement with WVU CES to support Emily Grafton activities will continue through FY 1992.

Distribution of Published Materials - AIPM through IPA will insure that published materials are available to help cooperators meet public involvement objectives. From Morgantown, published materials will be distributed to: Tom Cary (VDACS, Harrisonburg) for Virginia State & Private Agencies; Jeff Witcosky (GWNF, Harrisonburg) for Virginia Federal Agencies; Emily Grafton (WVU CES, Morgantown) for West Virginia State & Private Agencies; David Faike (MNF, Elkins) for West Virginia Federal Agencies.

Dimilin Study Public Involvement - IPA will support AIPM in the implementation of public involvement activities relating to the Dimilin Study on the Fernow Experimental Forest. Activities include production of public bulletins, newsreleases, and facilitation of working group meetings.

Technology Transfer - IPA will provide assistance to AIPM for implementing technology transfer.

GIS Related Activities

In FY 1992, the AIPM GIS Group will continue to incorporate data and produce maps and other interpretative data products for use by project field personnel, project decisionmakers, and others interested in AIPM's efforts in managing the gypsy moth. The 1991 egg mass and 1992 treatment, defoliation data sets will be incorporated into the AIPM GIS. Further work will be done to convert Digital Line Graph (DLG) and Digital Elevation Model (DEM) data into ARC/INFO coverages. Analysis of point data associated with pheromone trap catch and egg mass data will continue, with refinements made as needed. Other data layers will be used in the analysis of gypsy moth related activities, both in tracking the location and spread of the moth and in AIPM's efforts toward slowing the spread and minimizing impacts. Data collection, input and output procedures will be reviewed and modified when necessary. Development of a microcomputer-based GIS which could be used by a state and/or county agency was initiated in FY 1990 and will continue into FY 1992 as will refinement of the Coopers Rock Project designed to use the GIS to assist in identifying possible treatment areas.

Research Support

The Northeast Forest Experiment Station - Gypsy Moth Research and Development (GMR&D) Program provided funding to scientists in and outside the Forest Service for studies directed at increasing knowledge and developing technologies in the following areas: 1) effects of gypsy moth on forests; 2) gypsy moth biology and population dynamics; 3) management control options, especially the use of microbials, and 4) models and integration of knowledge. The 1991 effort included approximately 31 projects which were extramurally funded to university and state investigators. At the present time, proposals to be considered for funding in 1992 are being submitted to the GMR&D Program; a final list of approved proposals will be distributed as soon as available.

Budget

The funding level requested by the Steering Committee for FY 1992 was \$9.0 million. The funding received for FY92 is \$7.8 million and coupled with a \$0.4 million carryover from FY91 provides a total of \$8.2 million (Table 7).

There is a very strong possibility that the data presented in this paper are not representative of the entire population of the United States. The data were collected from a single source, and the sample size is small. Therefore, the results should be interpreted with caution.

The data presented in this paper are based on a single source, and the sample size is small. Therefore, the results should be interpreted with caution. The data were collected from a single source, and the sample size is small. Therefore, the results should be interpreted with caution.

The data presented in this paper are based on a single source, and the sample size is small. Therefore, the results should be interpreted with caution. The data were collected from a single source, and the sample size is small. Therefore, the results should be interpreted with caution.

The data presented in this paper are based on a single source, and the sample size is small. Therefore, the results should be interpreted with caution.

References

1. Smith, J. D. (1998). The impact of the Internet on the economy. *Journal of Economic Surveys*, 12(1), 1-20.

2. Jones, A. B. (2001). The effects of the Internet on the economy. *Journal of Economic Surveys*, 15(1), 1-20.

3. Brown, C. D. (2003). The effects of the Internet on the economy. *Journal of Economic Surveys*, 17(1), 1-20.

4. White, E. F. (2005). The effects of the Internet on the economy. *Journal of Economic Surveys*, 19(1), 1-20.

5. Black, G. H. (2007). The effects of the Internet on the economy. *Journal of Economic Surveys*, 21(1), 1-20.

6. Green, I. J. (2009). The effects of the Internet on the economy. *Journal of Economic Surveys*, 23(1), 1-20.

7. Hall, K. L. (2011). The effects of the Internet on the economy. *Journal of Economic Surveys*, 25(1), 1-20.

8. Young, M. N. (2013). The effects of the Internet on the economy. *Journal of Economic Surveys*, 27(1), 1-20.

9. Kim, P. Q. (2015). The effects of the Internet on the economy. *Journal of Economic Surveys*, 29(1), 1-20.

10. Lee, S. W. (2017). The effects of the Internet on the economy. *Journal of Economic Surveys*, 31(1), 1-20.

Conclusion

The findings of this study suggest that the Internet has a significant impact on the economy. The results show that the Internet has led to a decrease in the number of jobs, a decrease in the number of hours worked, and a decrease in the number of people working full-time. These findings are consistent with the hypothesis that the Internet has led to a decrease in the number of jobs, a decrease in the number of hours worked, and a decrease in the number of people working full-time.




The findings of this study suggest that the Internet has a significant impact on the economy. The results show that the Internet has led to a decrease in the number of jobs, a decrease in the number of hours worked, and a decrease in the number of people working full-time.

The findings of this study suggest that the Internet has a significant impact on the economy. The results show that the Internet has led to a decrease in the number of jobs, a decrease in the number of hours worked, and a decrease in the number of people working full-time.





AIPM

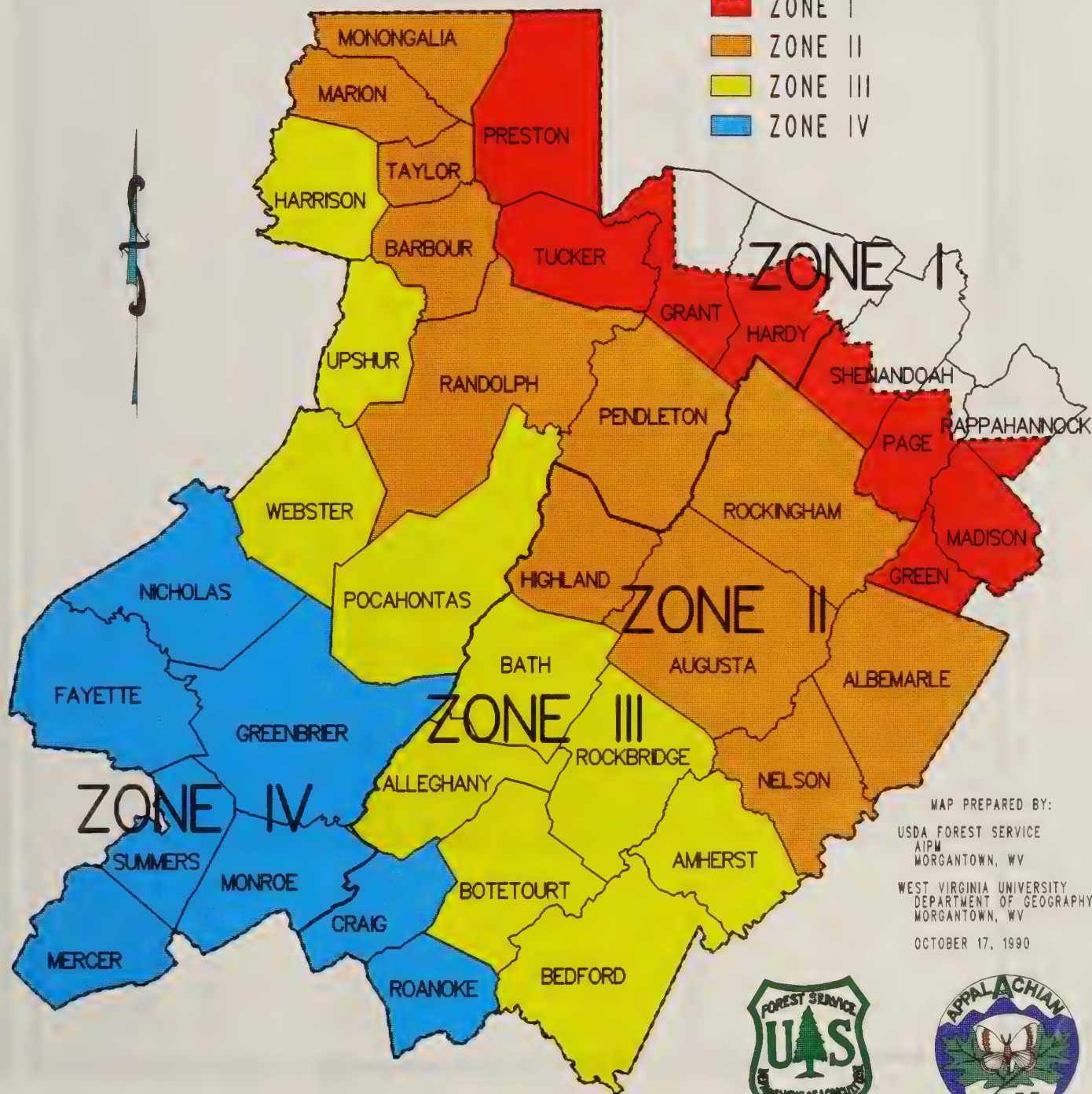
GYPSY MOTH PROJECT AREA

1991 INTERVENTION ZONES

-  AIPM BOUNDARY
-  COUNTY BOUNDARY
-  STATE BOUNDARY

KEY TO ZONES

-  ZONE I
-  ZONE II
-  ZONE III
-  ZONE IV

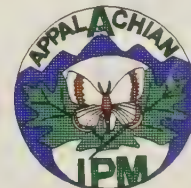


MAP PREPARED BY:

USDA FOREST SERVICE
AIPM
MORGANTOWN, WV

WEST VIRGINIA UNIVERSITY
DEPARTMENT OF GEOGRAPHY
MORGANTOWN, WV

OCTOBER 17, 1990



1991 INTERVENTION ZONES GYPSY MOTH PROJECT AREA AIPM

5 AIPM BOUNDARY
Y BOUNDARY
BOUNDARY

KEY TO ZONES

- ZONE I
- ZONE II
- ZONE III

ROCKEFELLER

DEPT. OF AGRICULTURE
FOREST SERVICE
WASHINGTON, DC
OCTOBER 11, 1990

Table 1

Proposed AIPM NEPA Schedule for FY 1992^a

Guidelines for Cooperating Agencies

BY THIS DATE:	COMPLETE THE FOLLOWING:	CONDUCT THESE PUBLIC INVOLVEMENT ACTIVITIES:	NOTE THESE ITEMS IN THE PROJECT FILE:
October 15	Identify "Best Guess" Counties or surveyed areas likely to have intervention activities proposed. Identify person or persons who will prepare the EA. Develop preliminary list of Issues.	Begin Scoping. Meet with concerned groups and individuals. Public Notification of dates, times and locations of public involvement activities.	Scoping activities conducted and names of those contacted List of attendees and minutes of meetings. Record of how scoping activities were publicized
November 30	EA preparer(s) meet with appropriate individuals to develop strategy.	Send scoping letter, include map or detailed description of areas where activities are likely to be proposed.	Copy of scoping letter, list of recipients

^aThis timetable assumes that floodplains and/or wetlands are present; therefore, a 30-day waiting period (March 22-April 21) for public comment is included. All site-specific EA's will be prepared using this timetable even if neither floodplains nor wetlands are present. This timetable may be adapted to meet local conditions of each cooperating agency.

10/10/1910

10/10/1910

10/10/1910

10/10/1910

10/10/1910

10/10/1910

Proposed AIPM NEPA SCHEDULE for FY 1992

Guidelines for Cooperating Agencies

BY THIS DATE:	COMPLETE THE FOLLOWING:	CONDUCT THESE PUBLIC INVOLVEMENT ACTIVITIES:	NOTE THESE ITEMS IN THE PROJECT FILE:
December 10	---	Issue a press release describing counties or areas where treatments might be proposed and upcoming opportunities for public involvement.	Copy of press release and list of media to which it was sent
January 10	Complete list of Issues	Conduct open houses, public meetings, forums, office hours to solicit public input and involvement. Other public involvement activities. Use Bleiker guidelines. (Utilize personnel who attended the training. Contact Terry Frey for help)	Record of all meetings, forums etc. List of those who attended along with a summary of their questions and comments Record of how activities were publicized
January 15	Egg mass surveys, data processing and mapping.	---	Copy of egg mass survey map

The above is a
 list of the
 names of the
 persons who
 have been
 appointed
 to the
 various
 positions
 in the
 office of
 the
 Secretary
 of the
 Board of
 Education
 for the
 year 1900-1901

Name	Office	Rank	Position	Date
John W. Smith	Superintendent	1st	Superintendent	1900
James H. Jones	Assistant	2nd	Assistant	1900
Mary E. White	Teacher	3rd	Teacher	1900
Robert L. Brown	Principal	4th	Principal	1900
Elizabeth C. Green	Assistant	5th	Assistant	1900

Proposed AIPM NEPA SCHEDULE for FY 1992 **Guidelines for Cooperating Agencies**

BY THIS DATE:	COMPLETE THE FOLLOWING:	CONDUCT THESE PUBLIC INVOLVEMENT ACTIVITIES:	NOTE THESE ITEMS IN THE PROJECT FILE:
January 31	---	<p>Send a summary of the egg mass survey results to original scoping memo mailing list; attendees of all meetings, forums etc.; concerned individuals and groups. Include an explanation of what they mean in terms of treatment proposals. If egg mass surveys are incomplete, release information on the portion that is done.</p> <p>Release summary of egg mass survey results and explanation to the press.</p> <p>Hold a followup meeting with concerned groups/ concerned individuals to discuss egg mass survey results.</p> <p>Make a concerted effort to publicize egg mass results and proposed treatment that might be implemented.</p>	<p>Copy of egg mass survey results and explanation</p> <p>List of individuals, groups and media sources to which it was sent</p> <p>List of attendees and minutes of meetings</p> <p>Record of how meeting was publicized</p> <p>Record of efforts to make egg mass survey results known</p>

Handwritten text block in the center of the page, consisting of several lines of cursive script.

Vertical handwritten text or a signature located along the left margin of the page.

Proposed AIPM NEPA SCHEDULE for FY 1992

(Continued)

Guidelines for Cooperating Agencies

BY THIS DATE:	COMPLETE THE FOLLOWING:	CONDUCT THESE PUBLIC INVOLVEMENT ACTIVITIES:	NOTE THESE ITEMS IN THE PROJECT FILE:
March 22	Responsible official signs FONSI/ Decision Notice. Begin 30-day waiting period.	<p>Publish legal notice of the decision in the designated newspaper.</p> <p>Lead agency must <u>actively</u> notify interested parties as to the existence of floodplain and/or wetland areas.</p>	Copy of legal notice and list of papers to which it was sent
March 30	<p>Complete Safety Plan and work plan, send to Morgantown or Atlanta.</p> <p>Complete AD 424 "Application for Federal Assistance," send to Morgantown or Atlanta.</p>	<p>---</p> <p>Press releases, radio announcements, landowner notification of where & when treatments will occur.</p>	---
April 22	End of 30-day waiting period, earliest date treatment may begin except NF's which require an additional 15 days.		Complete record of public notification process

Table 2. Acres Treated in 1990, 1991 and Proposed for Treatment in 1992.

Organization	Year	Bt	Dimilin	Gypchek	Flakes	Steriles	Total	Defoliation
GWNF	1990*	0	0	0	250	0	250	
	1990	3,311	580	0	0	0	3,891	
	1991*	720	0	0	0	0	720	
	1991	2,801	0	0	291	90	3,182	123,622
	1992*	0	0	0	0	0	0	
	<i>See Note</i> 1992	810	60	343	2,707	0	3,920	
VDACS S&P Lands)	1990*	0	0	0	393		393	
	1990	57,747	22,069	406	0	0	80,222	
	1991*	0	1,389	0	629	221	2,239	
	1991	39,760	19,710	1,341	2,915	0	63,726	165,000
	1992*	0	0	0	1,000	300	1,300	
	1992	44,007	46,361	1,200	500	0	92,068	
BRP	1990*	0	0	0	0	0	0	
	1990	1,335	488	48	0	0	1,871	
	1991*	0	0	0	0	0	0	
	1991	5	150	370		0	525	800
	1992*	0	0	0	0	0	0	
	1992	1,077	78	149	1,498	0	2,802	
MNF	1990*	0	0	0	0	0	0	
	1990	4,566	615	275	0	0	5,456	
	1991*	0	0	0	0	0	0	
	1991	9,396	443	160	0	0	9,999	12,600
	1992*	0	0	0	0	0	0	
	1992	9,940	0	470	500	0	10,910	
SNP	1990*	0	0	0	0	0	0	
	1990	747	759	100	0	0	1,606	
	1991*	0	0	0	0	0	0	
	1991	0	1,160	210	0	0	1,370	40,000
	1992*	0	0	0	0	0	0	
	1992	75	402	0	0	0	477	
WV (S&P Lands)	1990*	0	1,000	60	0	0	1,060	
	1990	61,478	103,133	500	0	0	165,111	
	1991*	0	0	0	0	0	0	
	1991	14,873	41,556	0	1,730	0	58,159	86,500
	1992*	0	0	0	0	0	0	
	1992	28,082	21,052	0	3,330	0	52,464	
TOTALS	1990*	0	1,000	60	643	0	1,703	
	1990	129,184	127,644	1,329	0	0	258,157	
	1991*	720	1,389	0	629	221	2,959	
	1991	66,835	63,019	2,081	4,936	90	136,961	428,522
	1992*	0	0	0	1,000	300	1,300	
	1992	83,991	67,953	2,162	8,535	0	162,641	

* Methods Improvement

Note: 1992 Gypchek and Flakes are planned for the Jefferson National Forest

Zone	Management Objective	Biological Parameters	Monitoring/Survey	Intervention Tactics	Agency Costs
I	-prevent damage which exceeds management objectives	male moths average > 500 per trap on area basis (also consider other factors e.g. stand susceptibility, egg mass counts)	monitor male moth populations on a 6-km grid or 2-/3-km; egg mass surveys <u>only</u> in priority areas	<u>Bt</u> (1 or 2 appl.), DFB, Gypchek, No Action	AIPM-male moth survey Intervention ^a
II	-maintain populations below 250 EM/A in priority areas and minimize spread into Zone III	male moths average 200-500 per trap on area basis	monitor male moth populations at a 6-Km, or 2-3-km grid; egg mass surveys <u>only</u> in priority areas	<u>Bt</u> (1 or 2 appl.), DFB, Gypchek, No Action	AIPM-male moth survey based on AIPM protocols AIPM-Intervention
III	-detect & maintain populations below 50 EM/A; reduce natural and artificial spread; maintain below 50 EM/A	male moths average 10- < 200 per trap on area basis	monitor male moth populations at 2-or 3-km grid; at 100, 250, or 500m grid at delimiting sites; egg mass surveys	<u>Bt</u> (2 appl.), DFB, Gypchek ^c , No Action ^b , & low-level tactics (pheromone flakes, <u>Bt</u> & mass trap, sterile pupae, mass trapping) ^d	AIPM-male moth survey based on AIPM protocols AIPM-Intervention
IV	-intensive detection and management of populations; reduce natural & artificial spread	male moths average < 10 per trap	monitor male moth populations at 500 m or 1-km grid; at 100, 250 or 500 m grid at delimiting sites when funds are available	<u>Bt</u> (2 appl.), DFB, Gypchek ^c , No Action ^b , and low-level tactics (pheromone flakes, <u>Bt</u> & mass trap, sterile pupae, mass trapping) ^d	AIPM-male moth survey based on AIPM protocols AIPM -Intervention

^a Intervention activities in Grant and Hardy Counties, WV will be cost shared by AIPM/WVDA and landowners at the same percent as for the cooperative landowners program. In Preston and Tucker Counties, WV and in Zone 1 counties of Virginia, AIPM will provide 70% of the intervention costs. In all other areas, AIPM will cost share at 100%.

^b No action is only an option in very limited situations within Zones III and IV.

^c Gypchek is not recommended for operational use against low-level populations. It can be used on an experimental basis in areas which require a gypsy moth specific tactic and population levels are too high for the use of low level gypsy moth specific tactics.

^d Low-level tactics (pheromone flakes, Bt and mass trap, sterile pupae, mass trapping) are recommended for use in limited situations (i.e isolated populations).

Section 1 of the 1901 Act

relating to the

of the

and the

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

1901 Act

Table 4.**Decision Protocols for use of Intervention Activities***Fiscal Year 1992*

In:	If the management objective ¹	and the average egg mass per acre count is	The available intervention activities ^{2, (3)}
Zone I - Generally Infested Portion of Project Area	to minimize damage such as defoliation impacts or tree mortality in:		
	timber or mast production areas or uninhabited woodlots... environmentally sensitive areas...	greater than 1,000...	no action, Bt (1- or 2-appl), Dimilin
			no action, Gypchek
	forested residential communities... environmentally sensitive areas...	greater than 500...	no action, Bt (1- or 2-appl), Dimilin
			no action, Gypchek
	high use areas, for example, recreation areas, parks, or along scenic highways or streets	greater than 250...	no action, Bt (1- or 2-appl), Dimilin ⁵
	environmentally sensitive areas...		no action, Gypchek
	special areas such as trout streams or historic sites...	greater than 250...	no action, Bt (1- or 2-appl), Dimilin
	Environmentally sensitive areas...		no action, Gypchek



Table 4

In:	If the management objective is ¹ :	and the average egg mass per acre count is	The available intervention activities ^{2, (3)}
Zones II and III - Transition Portion of Project Area	to minimize population buildup... environmentally sensitive areas...	Greater than 250...	no action ⁴ , Bt (2-appl), Dimilin ⁵ no action, Gypchek ⁶
	to minimize natural or artificial spread from high use or urban/suburban areas and protect special values...	greater than or equal to 50...	no action ⁴ , Bt (2-appl), Dimilin ⁵ no action, Gypchek ⁶
		less than 10...	low level tactics - pheromone flakes, sterile pupae or mass trapping ⁷
Zone IV - Isolated Portion of Project Area	to minimize natural and artificial spread from all areas and to apply intensive detection...	5 or more male moths	no action ⁴ , Bt (2-appl), Dimilin ⁵ , low level tactics - pheromone flakes, sterile pupae or mass trapping ⁷
	environmentally sensitive areas...		no action, Gypchek ⁶

- 1> Stand susceptibility and vulnerability should be considered along with population density, defoliation history, management objectives, and resource values. High susceptibility is defined as 50% or more of the basal area in oak, or 80% or more of basal area in favorable species.
- 2> Specific activity is to be recommended by land managers, reviewed by Planning Committee; and approved by Steering Committee.
- 3> The release/augmentation of exotic/established species of parasites and invertebrates predators of the gypsy moth or the ground application of Luretape are not recommended for use within the Project Area in 1992.
- 4> No action is only an option in very limited situations within Zones III and IV.
- 5> The operational use of Dimilin at these densities and high-use areas will require prior majority approval by a sub-group of Planning Committee members: Hacker, McAninch, Reardon, Swain, and Wolfe.
- 6> The use of Gypchek at densities less than 100 EM/A is recommended for use in limited situations as only preliminary data is available concerning its efficacy at these densities.
- 7> The low-level tactics (pheromone flakes, Bt and mass trapping, sterile pupae, mass trapping) are recommended for use in limited situations such as isolated populations. These tactics are not fully operational but ready for pilot testing.

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

TABLE 5

Methods Improvement, Pilot Projects, Special
Projects and Supportive Methods Proposed for Funding

Fiscal Year 1992

Activity	Objective	Cooperating Agency	Estimated Costs	
			FY92 AIPM	Cooperator
METHODS IMPROVEMENT				
Gypchek	Evaluate two commercially produced "ready to use" formulations in terms of physical properties, wind tunnel and spray tower tests, and field efficacy.	FIDR-Hamden FPMI-Canada (Podgwaite, Cunningham)	\$40,000 \$25,000 (application)	\$35,000
	Evaluate the standard formulation against low density populations.	FIDR-Hamden (Podgwaite)	\$15,000 \$13,000 (application)	\$7,000
Bt	Evaluate efficacy of single application (maximum dose) against low density populations.	FIDR-Hamden (Dubois)	\$17,000 \$13,000 (application)	\$7,000
	Evaluate efficacy against 3rd and 4th stage larvae	FIDR-Hamden NEFAAT (Dubois, Mierzejewski)	\$5,000 \$5,000 (application)	\$3,000
	Continue to evaluate techniques to determine the residual activity of Bt on foliage over time.	FIDR-Hamden FPMI-Canada NEFAAT (Dubois,Sundaram, Mierzejewski)	\$31,000	\$14,000
Pheromone Flakes and Beads	Develop an improved operational system for dispensing pheromone flakes, continue monitoring and establish additional plots in Rockbridge County for aerial application of flakes and beads.	ARS-Beltsville FPM-Asheville, APHIS-Otis, VDACS (Leonhardt, Leonard McLane/Mastro, McAninch)	\$21,000 \$6,000 (application)	\$12,000
All above	Salary and travel for Morgantown field crews (6) to support Methods, Pilot, and and Special Projects		\$260,000	
METHODS IMPROVEMENT TOTAL			\$451,000	\$78,000

Table of contents

Introduction

Chapter 1

Chapter 2

Chapter 3

Chapter 4

TABLE 5

(Continued)

Activity	Objective	Cooperating Agency	Estimated Costs	
			FY92 AJPM	Cooperator
PILOT PROJECTS				
Diflubenzuron (DFB)	Aerial application of DFB to closed watersheds and continue non-target monitoring (all 3rd or 4th year evaluations)			
*	Potential effects of DFB on Stream Salamanders.	Marshall University (Pauley)	\$4,000	\$1,739
*	A comparative study of growth rates, survivorship and population dynamics of terrestrial salamanders.	Marshall University (Pauley)	\$4,000	\$2,578
*	Potential effects of DFB on the canopy arthropod fauna.	West Virginia Univ. (Butler)	\$2,000	\$7,382
	Potential effects of DFB on the soil microflora.	Shepherd College (Landolt)	\$8,750	\$1,550
	Potential effects of DFB on aquatic macroinvertebrates- field monitoring.	West Virginia Univ. (Perry)	\$48,096	\$16,557
	Potential effects of DFB on leaf litter arthropods.	West Virginia Univ. (Perry)	\$38,240	\$12,916
	Potential effects of DFB on aquatic macroinvertebrates- laboratory studies.	West Virginia Univ. (Perry)	\$15,750	\$14,890
	Potential effects of DFB on pollinators.	Georgetown Univ. (Barrows)	\$28,240	\$11,000
	Potential effects of DFB on aquatic fungi.	Shepherd College (Dubey)	\$16,500	\$3,400
*	DFB residue analysis (leaves, litter, etc.)	West Virginia Univ. (Wimmer)	\$8,000	\$2,100
	DFB residue analysis (water).	NC State (Harper)	\$5,000	\$1,600
	Lab/field assistance for cooperators.	FIDR-Parsons (Adams)	\$18,600	\$16,500
	Potential effects of DFB on fungus/leaf shredder complex.	Univ. of Pittsburgh (Cummins)	\$16,173	\$7,300
DIFLUBENZURON SUBTOTAL			\$213,349	\$99,512

*Also supported using FY91 funds

TABLE 5

(Continued)

Activity	Objective	Cooperating Agency	Estimated Costs FY92	
			AIPM	Cooperator
PILOT PROJECTS (Cont inued)				
Gypchek	Aerial application of low dose/volume on large blocks (evaluated on small Plots in 1991)	FIDR-FPMI (Podgwaite, Cunningham)	\$5,000	\$3,000
Pheromone Flakes	Monitoring of numerous areas in Rockbridge County, and in Zones III, IV	APHIS-OTIS,VDACS, FPM-Asheville, ARS-Beltsville	\$15,000	\$7,400
Silviculture	Silviculture/low-level intervention activities	Jefferson NF (Hedrick)	\$80,000	\$15,000
PILOT PROJECT TOTAL			\$313,349	\$124,912

TABLE 5

(Continued)

Activity	Objective	Cooperating Agency	Estimated Costs	
			FY92	
			AIPM	Cooperator
SPECIAL PROJECTS/ SUPPORTIVE METHODS				
1	* Monitoring and identification of canopy arthropods and aquatic macroinvertebrates in Virginia Big-eared Bat study plots	West Virginia Univ. (Butler)	\$3,000	\$800
2	** Release and attempted establishment of the fungus Entomophaga maimaiga within the AIPM Project area.	Boyce Thompson Inst. Univ. of Massachusetts (Hajek, Elkinton)	\$10,000	\$9,122
3	Bt - non-target study in two counties in VA (gypsy moth populations <10EM/A-2nd year)	VA County Coordinators FIDR-Hamden (Talley, Williams, Peacock)	\$25,000	\$13,500
	Bt-non-target study in West Virginia-habitats of the Virginia Big-eared Bat.	West Virginia Univ. (Samples)	\$75,700	\$38,500
4	Changes in streamwater chemistry and associated impact on trout populations due to gypsy moth defoliation.	James Madison Univ (Downey)	\$30,650	\$4,080
5	Update and maintain data acquisition system for the AIPM Project.	VPI&SU (Ravlin)	\$53,730	\$14,600
6	Implementation of a database system for the AIPM Project.	VPI&SU (Ravlin)	\$43,189	\$11,300
7	Continue development & implementation of a large area, standardized gypsy moth IPM package. Includes additional development for Ranger Districts, Counties.	VPI&SU (Ravlin)	\$50,036	\$15,300
SPECIAL PROJECTS/SUPPORTIVE METHODS SUBTOTAL			\$291,305	\$107,202

* Also supported by FY91 funds

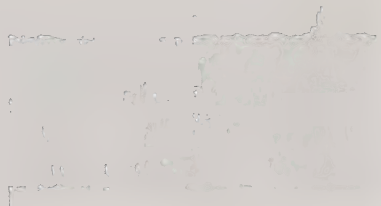
** FIDR is contributing \$20,000 toward FY92 total of \$30,000

TABLE 5

(Continued)

Activity	Objective	Cooperating Agency	Estimated Costs FY92	
			AIPM	Cooperator
SPECIAL PROJECTS/ SUPPORTIVE METHODS (Cont inued)				
8	Biological technician to assist in conduct of laboratory and field studies to evaluate weatherability of Bt, stickers, formulations for pheromone beads,etc.	APHIS (McLane)	\$18,000	\$0
9	GIS Development & Support	West Virginia Univ. (Elmes)	\$31,713	\$10,172
10	* Technical assistance to AIPM-GIS	West Virginia Univ. (Elmes)	\$1,000	\$4,509
11	Biological technician support for laboratory evaluation/testing of pheromone flakes/beads.	ARS-Beltsville (Leonhardt)	\$5,000	\$0
12	Effects of gypsy moth defoliation on the aquatic biota of head-water streams in Shenandoah National Park.	SNP, VPI&SU (Watson)	\$36,765	\$9,600
13	* Aerial application for gypsy moth suppression: Dimilin accountability in deciduous forests.	Penn State Univ. (Yendol)	\$20,000	\$7,300
14	* Short-term non-target monitoring in suppression areas.	Environmental Action (Pierce)	\$1,000	\$0
15	* Public Involvement	West Virginia Univ. (Grafton)	\$2,000	\$0
16	Incorporate calibration expert system into Swath Kit and develop tool kit for each Kit.	Bio-aeronautical technologies (Bryant)	\$7,300	\$0
SPECIAL PROJECTS/SUPPORTIVE METHODS SUBTOTAL			\$122,778	\$31,581

* Also supported by FY91 funds



THE UNIVERSITY OF CHICAGO

LIBRARY

DATE	TIME	LOCATION	REMARKS
1950	10:00	Library	Received book
1950	11:00	Library	Returned book
1950	12:00	Library	Received book
1950	13:00	Library	Returned book
1950	14:00	Library	Received book
1950	15:00	Library	Returned book

THE UNIVERSITY OF CHICAGO

LIBRARY

TABLE 5

(Continued)

Activity	Objective	Cooperating Agency	Estimated Costs	
			FY92 AIPM	Cooperator
SPECIAL PROJECTS/ SUPPORTIVE METHODS (Cont inued)				
17	Hardware updates of all Swath Kits	MSU (Van Ee)	\$10,000	\$0
18	Potential cumulative effects of Dimilin on terrestrial litter arthropods in Prince William County, VA .	George Mason Univ. (Rockwood)	\$20,859	\$5,350
19	Potential effects of Dimilin on Blue Crab-continuation study supported in part by NAPIAP(\$47,000).	Univ. of Maryland (French)	\$23,000	\$4,600
20	Impact of the fungus Entomophaga maimaiga on non-target lepidoptera	Boyce Thompson Inst., (Hajek) and West Virginia Univ. (Butler)	\$28,982	\$5,797
21	Improve aerial application technology for use during suppression/eradication projects for gypsy moth.	Penn State Univ. (Yendol)	\$100,000	\$38,000
22	Initiation of activities for long-term monitoring project.	Technical Working Group (Reardon, et al)	\$26,000	\$0
SPECIAL PROJECTS/SUPPORTIVE METHODS SUBTOTAL			\$208,841	\$53,747
SPECIAL PROJECTS/SUPPORTIVE METHODS TOTAL			\$622,924	\$192,530

GENERAL INFORMATION

(Date:)

1	NAME	UNIT	
2	AGE	SEX	RELIGION
3	EDUCATION	OCCUPATION	MARRIAGE
4	FAMILY	ADDRESS	CITY
5	TELEPHONE	HOSPITAL	DEPARTMENT
6	DATE	TIME	NURSE
7	SIGNATURE	INITIALS	REMARKS
8	DATE	TIME	NURSE
9	DATE	TIME	NURSE

TABLE 6

Production of Intervention Resources for Use in 1992

No.	Item	Cooperating Agency	Estimated Costs
1	Rear and infect 7.5 million gypsy moth larvae for Gypchek production (8,000 to 10,000 AE)	APHIS-Otis (Mastro)	\$220,000
2	Purchase of pheromone flakes (@17,000 AE @ \$20/AE)	Hercon, Inc. (Quisumbing)	\$340,000
3	Pheromone traps, lures and DDVP strips	Hercon, Inc.	\$20,000
4	Processing of NPV infected cadavers for use in 1992	FIDR-Hamden (Podgwaite)	\$120,000
5	Purchase of pheromone beads (@1,200 AE)	AgriSense (Cook)	\$20,000
6	Production of approximately 500,000 sterile pupae	APHIS-Otis (Mastro)	\$30,000
7	Aerial application costs for pilot projects		
	*DFB to Parsons Watershed	110 acres	\$2,200
	*Bt to non-target areas in VA	250 acres	\$5,000
	*Pheromone flakes to WV/VA	15,000 acres	\$175,000
	*Pheromone flakes to Floyd County, VA	2,000 acres	\$25,000
8	Formulation components (e.g. sticker, Orzan) for pilot project/ operational use of pheromone flakes and Gypchek		\$10,000
9	Purchase of Foray 48B for Methods and Pilot Projects		\$14,000
TOTAL			\$981,200

TABLE 7

Summary of AIPM Budget- Fiscal Year 1992

	Budget Category	Proposed by Cooperators (in millions)	Approved by Steering Committee
A	ADMINISTRATION	4.9	\$4,593,301
B	OPERATIONS (Survey, GIS, Monitoring)		
C	METHODS IMPROVEMENT/ PILOT/SPECIAL PROJECTS	1.0	\$1,387,273
D	INTERVENTION RESOURCES	1.1	\$981,200
E	INTERVENTION	2.0	\$1,238,226
TOTAL		9.0	\$8,200,000

RECEIVED
JAN 10 1900

THE UNIVERSITY OF CHICAGO
LIBRARY

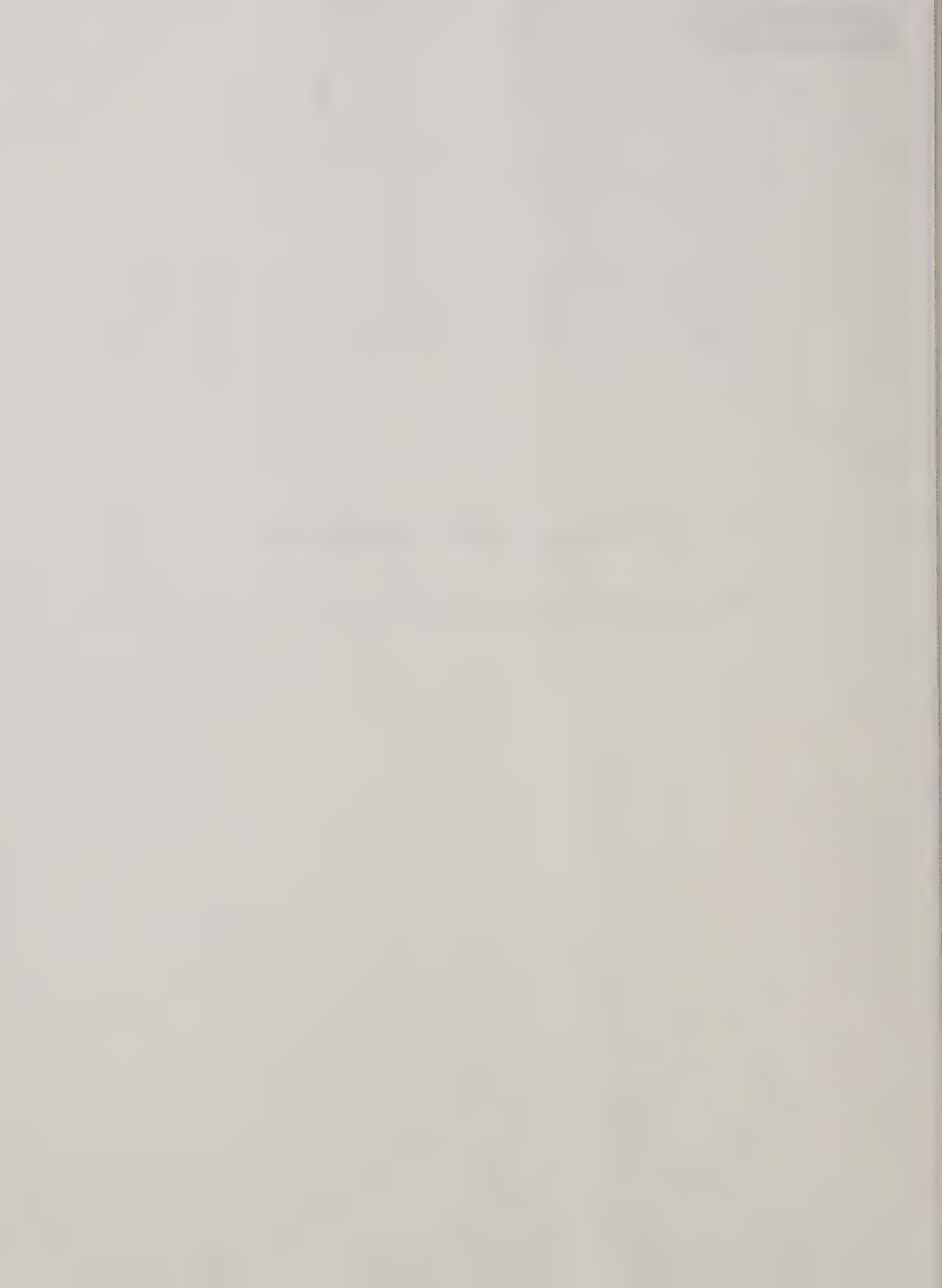
CHICAGO, ILL.

1900

RECEIVED
JAN 10 1900

AIPM Gypsy Moth Project Area

Pheromone Trap Catch and Egg Mass Survey Data



AIPM PROJECT AREA 1988 PHEROMONE TRAP CATCH

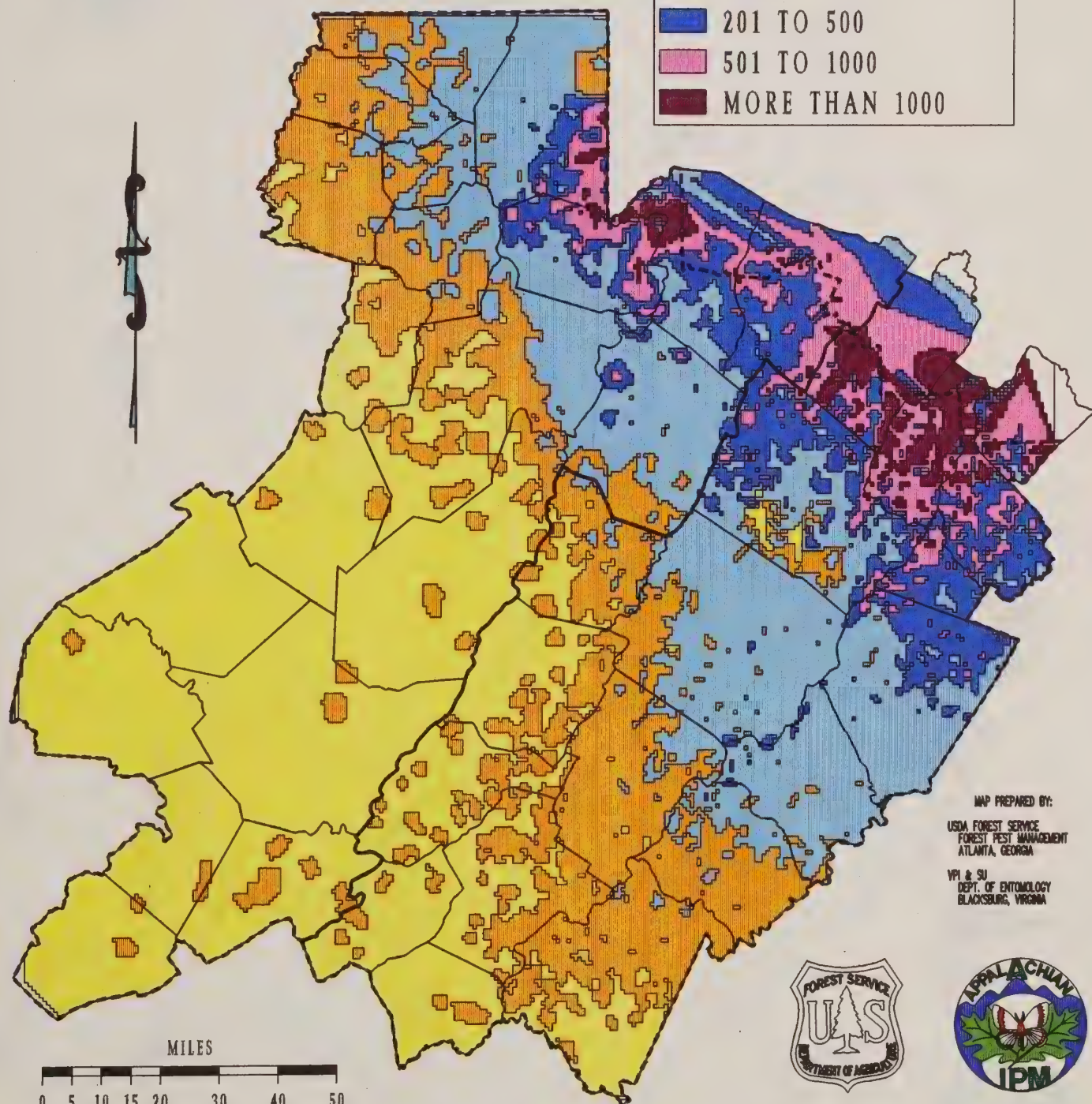
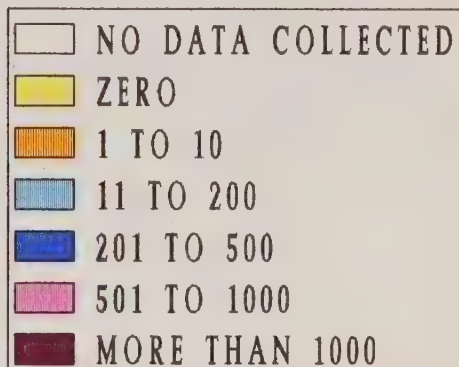
(12/88 DATABASE)

DATA INTERPOLATED FROM SINGLE SITE VALUES

NUMBER OF MALE GYPSY MOTHS TRAPPED



--- AIPM BOUNDARY
--- AIPM COUNTIES
--- STATE LINE



MAP PREPARED BY:

USDA FOREST SERVICE
FOREST PEST MANAGEMENT
ATLANTA, GEORGIA

VPI & SU
DEPT. OF ENTOMOLOGY
BLACKSBURG, VIRGINIA



ATPM PROJECT AREA 88 PHEROMONE TRAP CATCH

(USE DATABASE)

DATA INTERPOLATED FROM SINGLE TRAP VALUE

1978

71

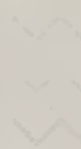
NUMBER OF

NO DATA	<input type="checkbox"/>
YES	<input type="checkbox"/>

ATPM BORDERS

ATPM COUNTS

STATE LINE



AIPM PROJECT AREA 1988 EGG MASS SURVEY DATA

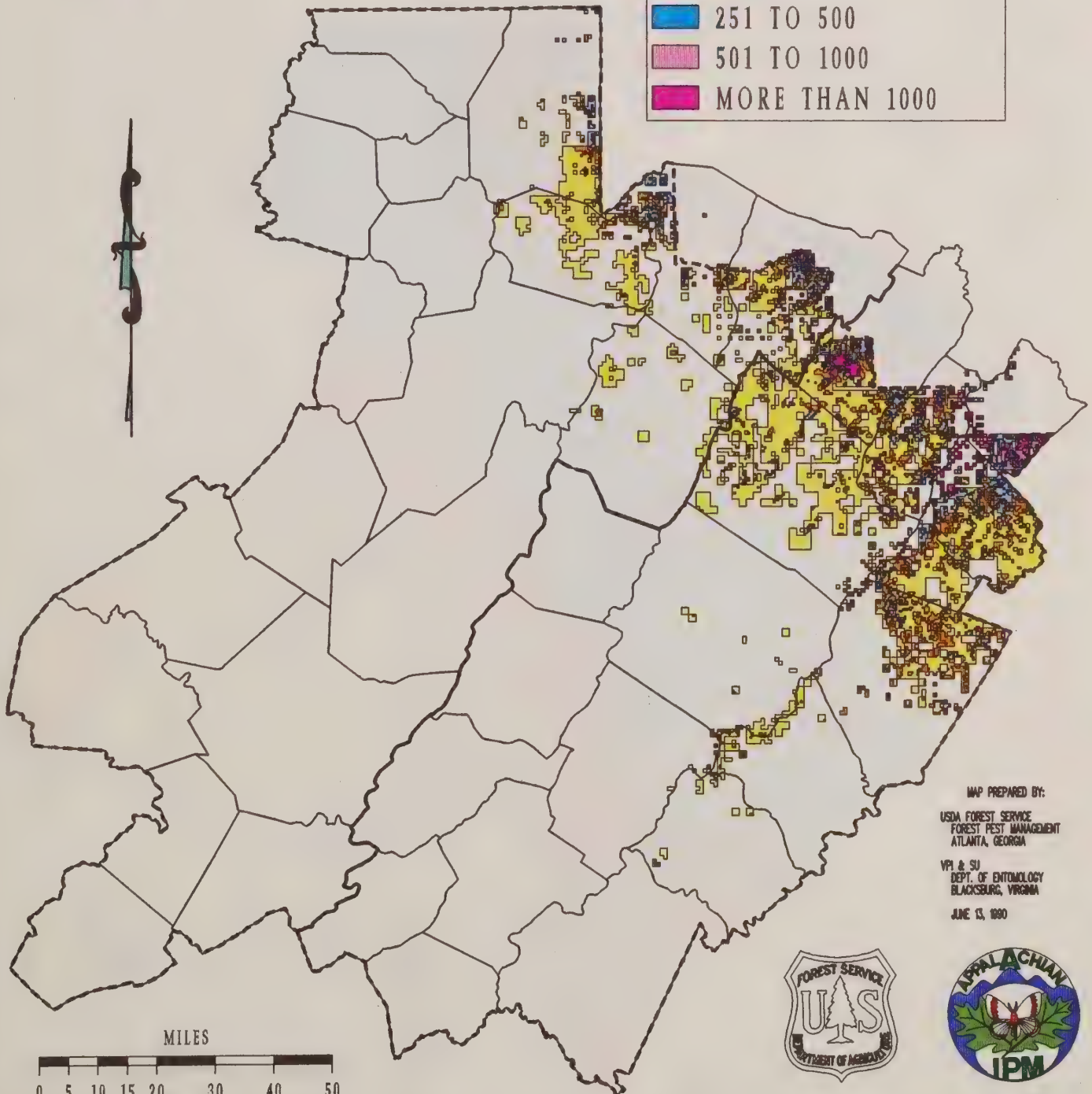
(4/89 DATABASE)

DATA INTERPOLATED FROM SINGLE SITE VALUES

EGG MASSES PER ACRE



--- AIPM BOUNDARY
--- AIPM COUNTIES
--- STATE LINE



MAP PREPARED BY:
USDA FOREST SERVICE
FOREST PEST MANAGEMENT
ATLANTA, GEORGIA
VPI & SU
DEPT. OF ENTOMOLOGY
BLACKSBURG, VIRGINIA
JUNE 13, 1990



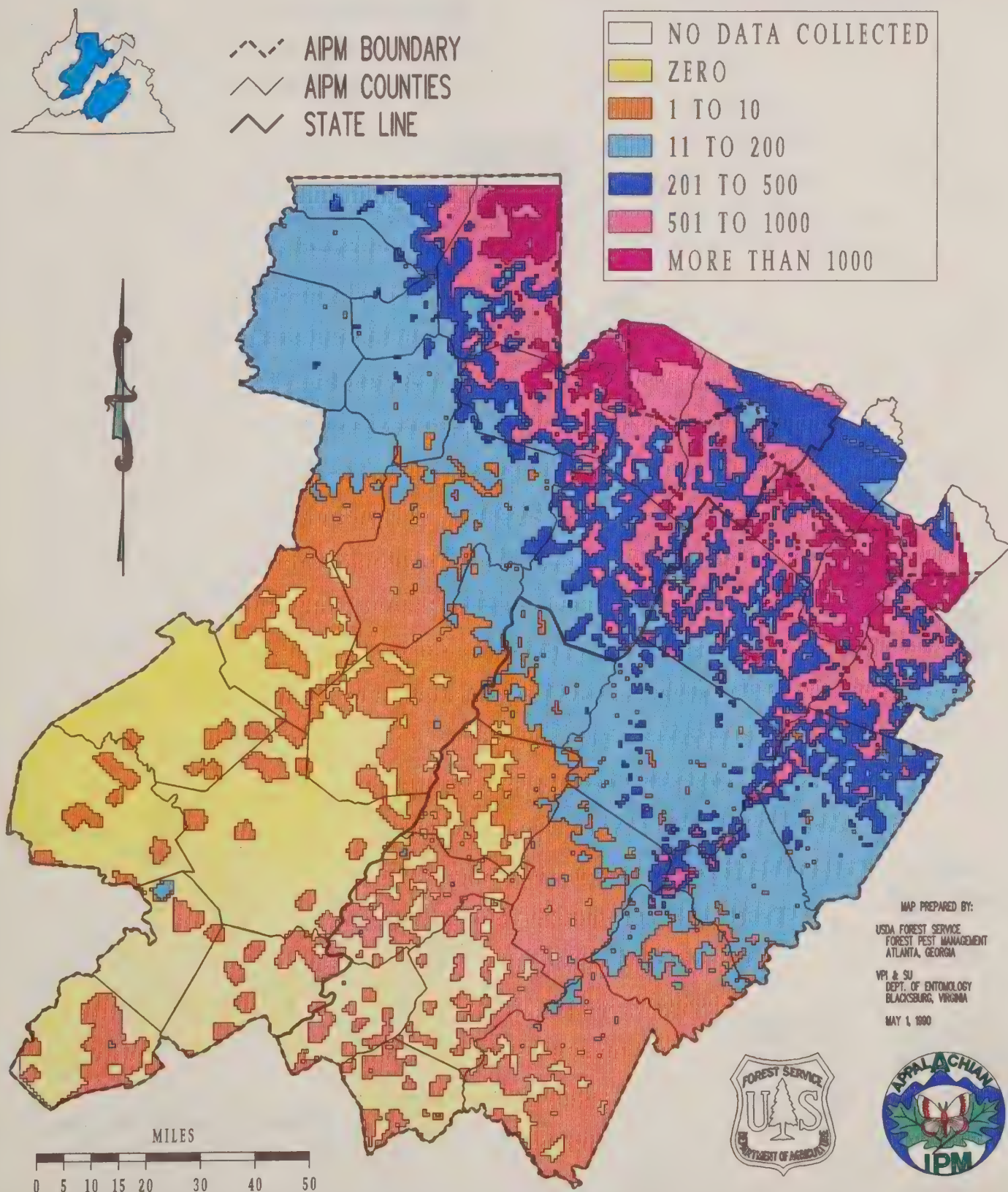


AIPM PROJECT AREA 1989 PHEROMONE TRAP CATCH

(12/15/89 DATABASE)

DATA INTERPOLATED FROM SINGLE SITE VALUES

NUMBER OF MALE GYPSY MOTHS TRAPPED





AIPM PROJECT AREA 1989 EGG MASS SURVEY DATA

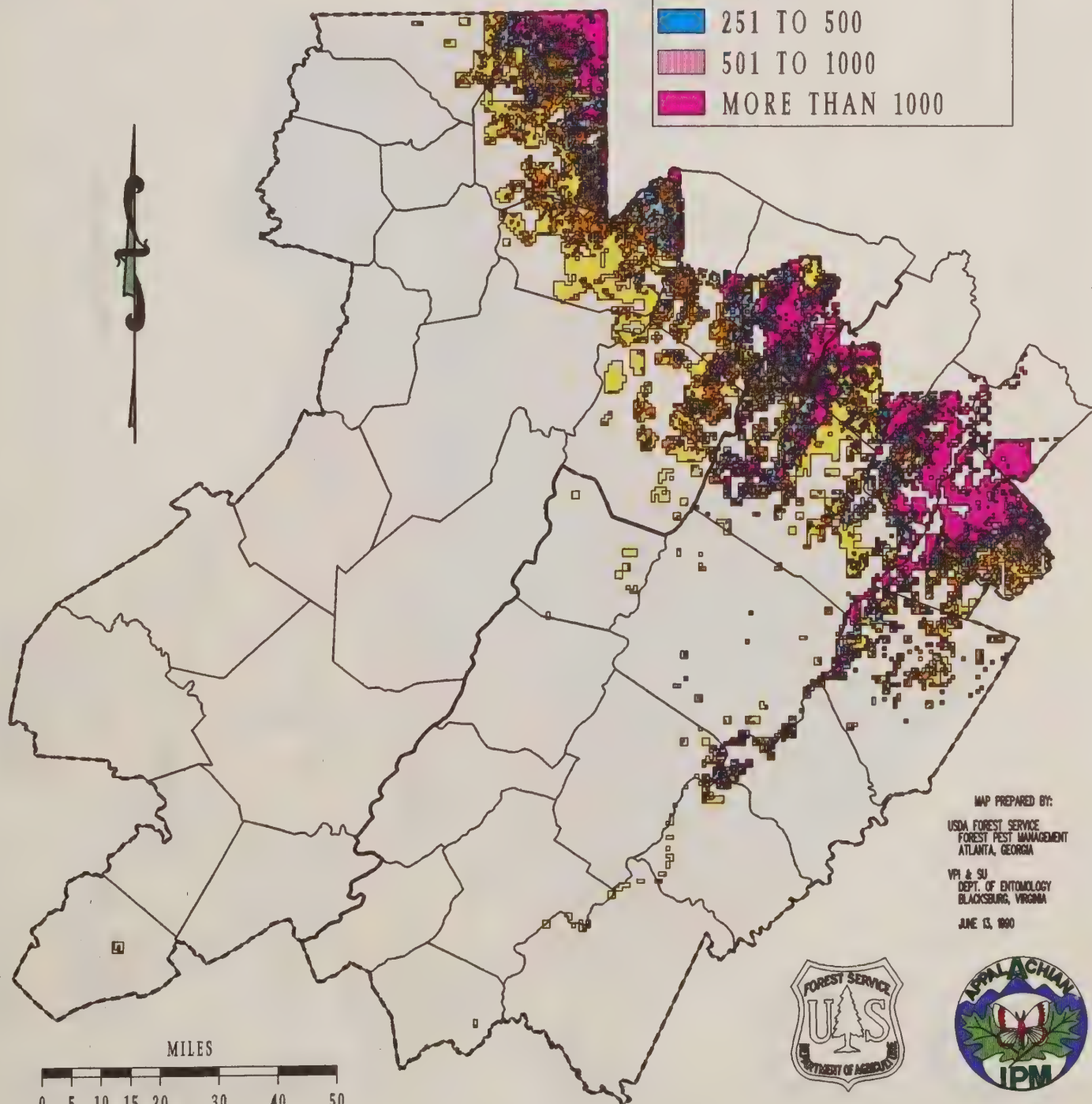
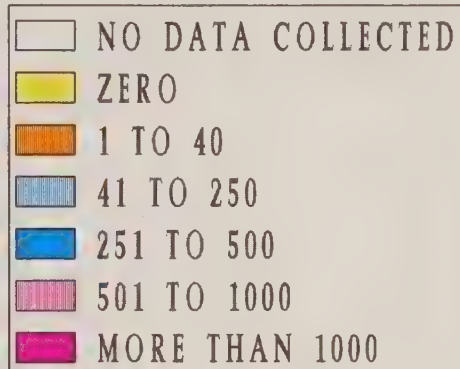
(5/90 DATABASE)

DATA INTERPOLATED FROM SINGLE SITE VALUES

EGG MASSES PER ACRE



- AIPM BOUNDARY
- AIPM COUNTIES
- STATE LINE






MAP PREPARED BY:
USDA FOREST SERVICE
FOREST PEST MANAGEMENT
ATLANTA, GEORGIA
VPI & SU
DEPT. OF ENTOMOLOGY
BLACKSBURG, VIRGINIA
JUNE 13, 1990

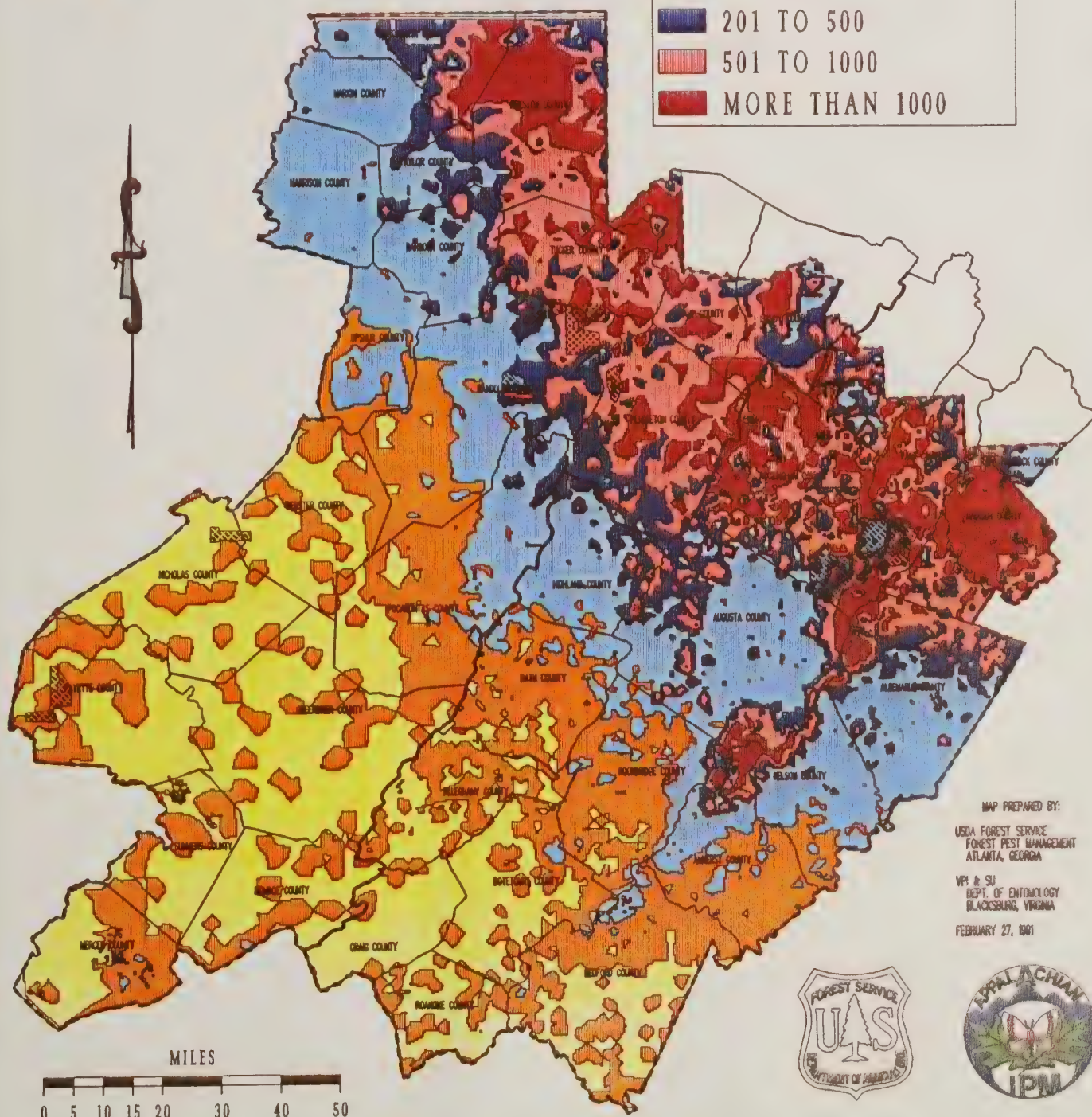


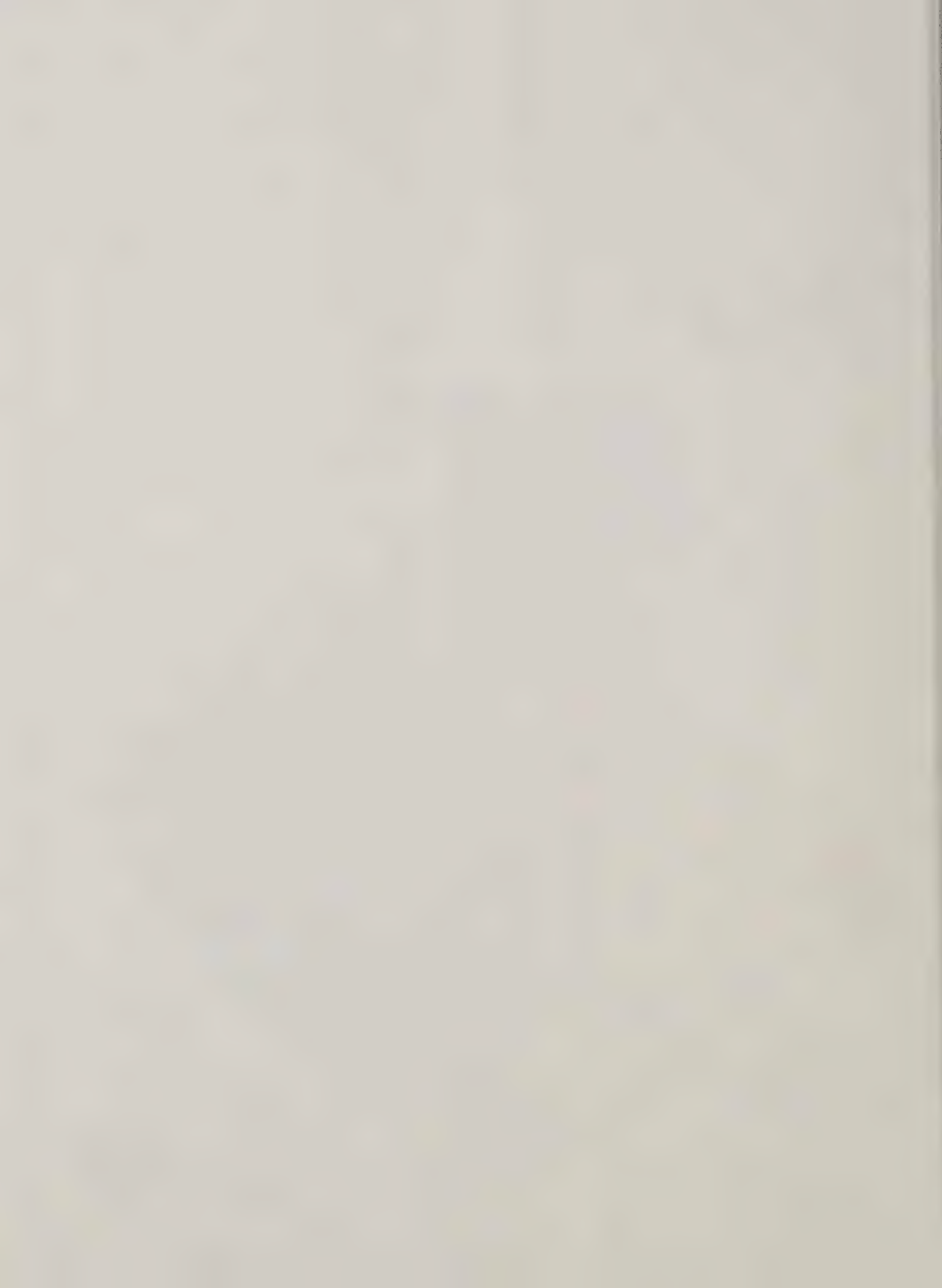


(2/8/91 DATABASE)

 AIPM BOUNDARY
 AIPM COUNTIES
 STATE LINE

 NO DATA COLLECTED
 ZERO
 1 TO 10
 11 TO 200
 201 TO 500
 501 TO 1000
 MORE THAN 1000





AIPM PROJECT AREA 1990 EGG MASS SURVEY DATA

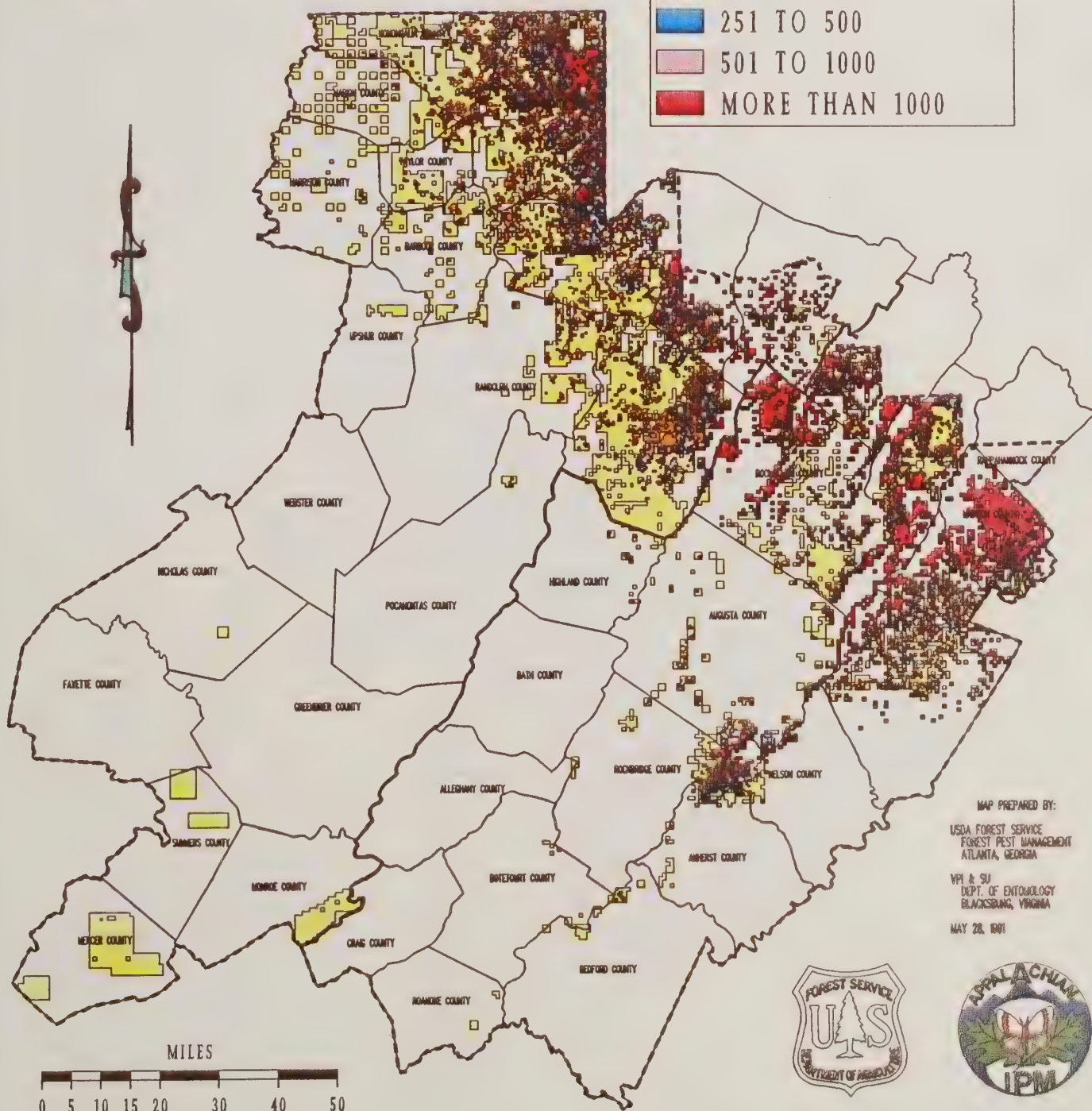
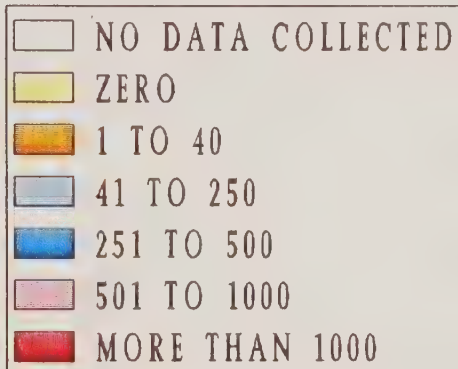
(5/91 DATABASE)

DATA INTERPOLATED FROM SINGLE SITE VALUES

EGG MASSES PER ACRE



- AIPM BOUNDARY
- AIPM COUNTIES
- STATE LINE



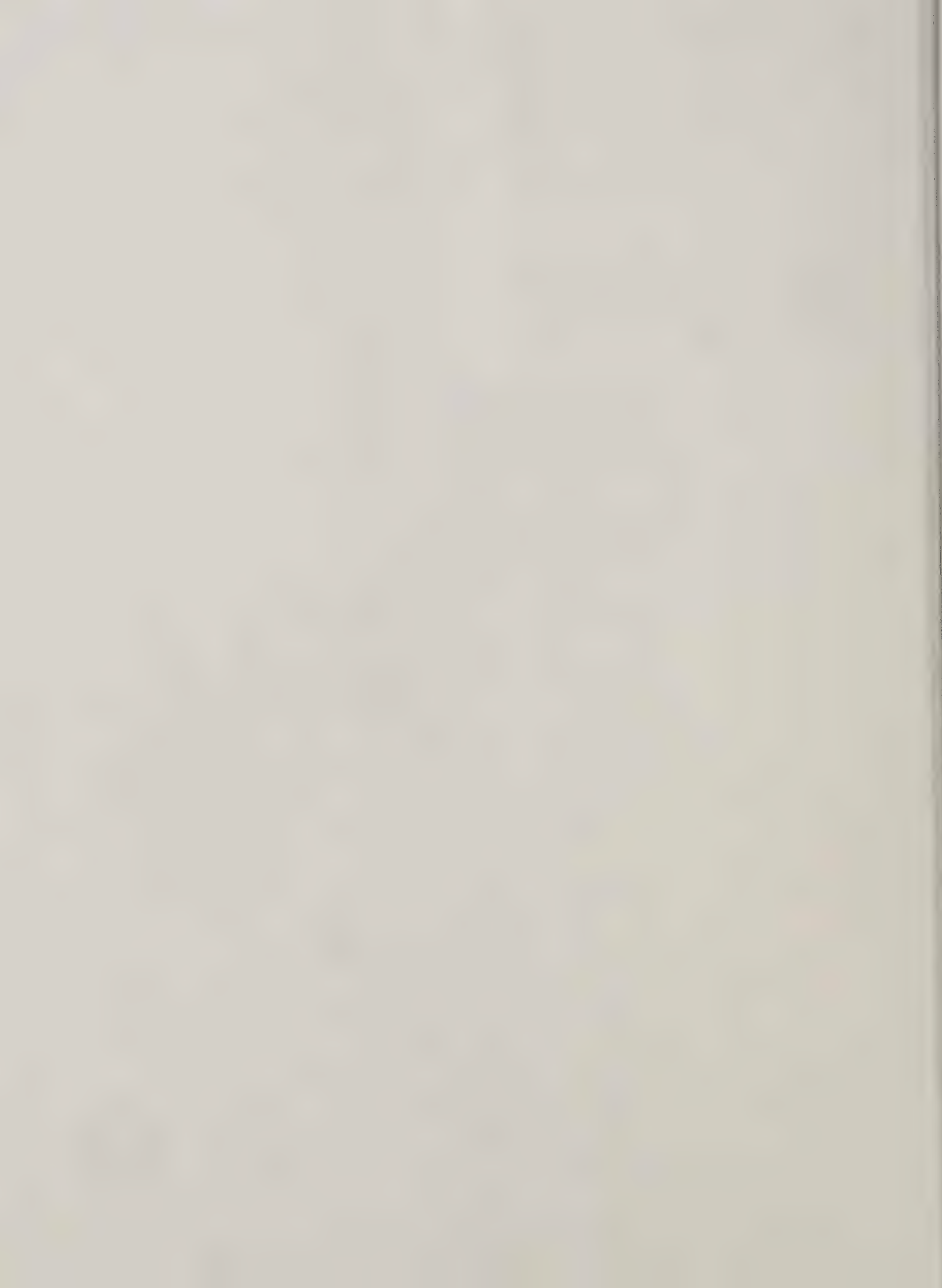
MAP PREPARED BY:

USDA FOREST SERVICE
FOREST PEST MANAGEMENT
ATLANTA, GEORGIA




WPI & SU
DEPT. OF ENTOMOLOGY
BLACKSBURG, VIRGINIA







MAY 28, 1991

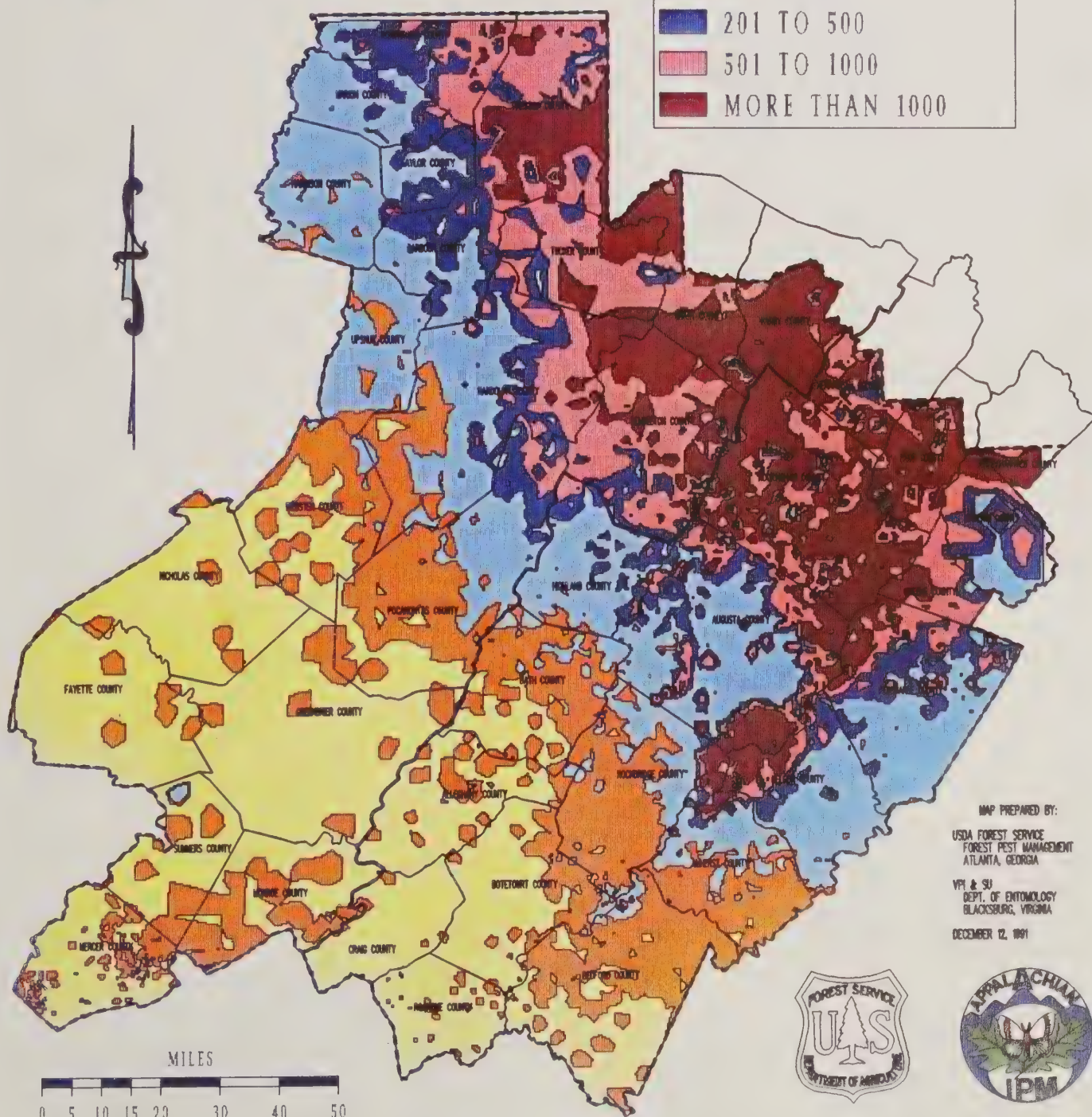




(12/9/91 DATABASE)

 AIPM BOUNDARY
 AIPM COUNTIES
 STATE LINE

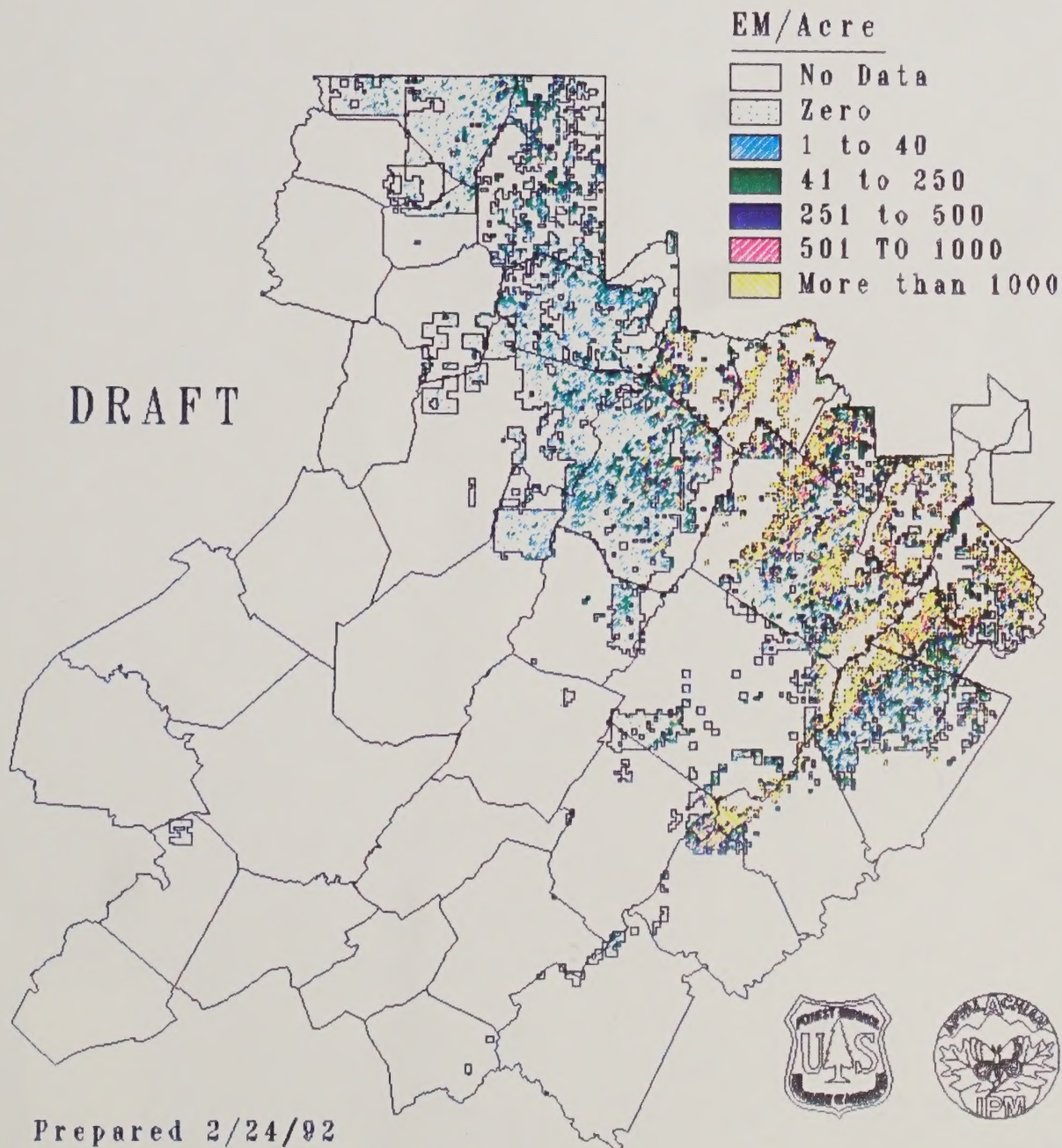
 NO DATA COLLECTED
 ZERO
 1 TO 10
 11 TO 200
 201 TO 500
 501 TO 1000
 MORE THAN 1000



AIPM Demonstration Project 1991-92 Egg Mass Survey

Data interpolated from single site values.

Data current as of 2/24/92



ALMA MATER
1901-02
This collection is a copy of the
first edition of the book.



NATIONAL AGRICULTURAL LIBRARY
1023072128

NATIONAL AGRICULTURAL LIBRARY



1022757798